

## REMARKS

1. Claims 1-21 are pending and stand rejected in the application. This communication amends claim 8.

Reconsideration of this application is respectfully requested.

2. Claim 8 has been amended to delete the phrase "from the input buffer."

3. Claims 1-6 and 8-13 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Publication 2002/0064177 to Bertram and U.S. Patent 6,219,358 to Pinder. In support of this rejection, the examiner essentially contends that Bertram teaches the claimed input buffer and broadly teaches the claimed video processor. The examiner then relies on Pinder for teaching the claimed features of the video processor.

The apparatus of independent claim 1 is for inserting new data packets into an incoming digital video transport stream containing original data packets. The video processor of claim 1 is claimed as follows:

a video processor capable of retrieving said stored original data packets from said input buffer and determining from said original data packets N data frequencies associated with N most recently received ones of said plurality of original data packets, wherein said video processor estimates from said N data frequencies an estimated data frequency of a plurality of next incoming original data packets and uses said estimated data frequency to determine an insertion rate at which said new data packets may be inserted into said plurality of next incoming original data packets.

The method of independent claim 8 is for inserting new data packets into an incoming digital video transport stream containing original data packets. The method of claim 8 currently requires:

storing the original data packets of the incoming digital video stream;  
retrieving the stored original data packets;  
determining from the original data packets N data frequencies associated with N most recently received ones of the plurality of original data packets;

estimating from the N data frequencies an estimated data frequency of a plurality of next incoming original data packets; and  
 using the estimated data frequency to determine an insertion rate at which the new data packets may be inserted into the plurality of next incoming original data packets.

In contrast, Pinder discloses a system for dynamically controlling the rate of insertion of data into an outgoing bit stream. In Pinder, an input buffer receives an incoming bit stream and transfers it to a packet handler. The incoming bit stream contains incoming overhead and content information. The incoming overhead contains information specific to the incoming bit stream, e.g., MPEG table packets, stuffing packets, and incoming conditional access packets. The content information includes programming information, e.g., video packets, audio packets, and data packets. The MPEG table packets contain information specific to and describing the incoming bit stream. The packet handler receives the incoming bit stream from the input buffer, demultiplexes it, and extracts the incoming MPEG table information. The packet handler determines the content of the outgoing MPEG table packets and the rate at which the MPEG table packets should be inserted into the outgoing bit stream. This determination is based on the information extracted from the MPEG tables in the incoming bit stream and on input from control system. The packet handler determines the available capacity for insertion of the bit stream and adjusts the rate of insertion from the desired to an actual insertion rate. The adjustment can be done based on parameters such as the type of MPEG table to be inserted or the desired frequency of insertion. The packet handler constantly monitors the available capacity for insertion of the bit stream and adjusts the actual insertion rates accordingly. The packet handler includes packet router logic that determines the available capacity for insertion by monitoring the capacity of input buffer. The packet router logic delays enabling an insertion if the input buffer is not empty. The input buffer must become empty before an insertion is enabled.

Thus, Bertram and Pinder do not teach or suggest an apparatus or method for inserting new data packets into an incoming digital video transport stream. Bertram and Pinder merely teach an apparatus and method for extracting MPEG table packets from an

incoming digital video transport stream, and inserting the MPEG table packets into an outgoing bit stream based on the bit stream's available capacity for insertion. Moreover, the MPEG table packet insertion apparatus and method taught by Bertram and Pinder do not involve estimating the data frequency of a plurality of next incoming original data packets from N data frequencies and using the estimated data frequency to determine an insertion rate at which the new data packets may be inserted into the plurality of next incoming original data packets, as claimed. The insertion apparatus and method taught by Bertram and Pinder are merely based on monitoring the capacity of the input buffer. Accordingly, claims 1 and 8 are patentable over Bertram and Pinder.

With respect to claims 2-6, which depend upon claim 1 and recite additional features of the invention, and claims 9-13, which depend upon claim 8 and recite additional features of the invention, applicant believes these claims to be allowable for the same reasons as stated for claims 1 and 8, respectively.

In view of the foregoing, withdrawal of the rejection of claims 1-6 and 8-13 is respectfully urged.

4. Claim 7 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Bertram and Pinder and further in view of U.S. Patent 6,820,128 to Firoiu. Claim 14 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Bertram and Pinder and further in view of U.S. Patent 6,820,128 to Firoiu.

Claim 7 depends from claim 1 and therefore includes the subject matter recited in claim 1. Claim 14 depends from claim 8 and therefore includes the subject matter recited in claim 8. As discussed above, the subject matter recited in claims 1 and 8 is not taught or suggested by Bertram and Pinder. Firoiu, cited by the examiner for disclosing data packets scaled by a weighting factor, fails to cure the deficiencies of Bertram and Pinder as Firoiu does not teach or suggest, among other features, the video processor called for in claim 7 and the determining, estimating and estimated data frequency using steps of claim 14. Accordingly, withdrawal of these rejections is respectfully requested.

5. Claims 15-20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Bertram and U.S. Patent 6,473,858 to Shimomura and in view of Pinder. In support of

this rejection, the examiner essentially contends that Bertram and Shimomura teach the claimed television broadcasting system except, the features of the claimed video processor, which the examiner contends are taught by Pinder.

The television broadcasting system of independent claim 15 comprises a plurality of broadcast facilities, each of which comprises an apparatus for inserting new data packets into a received at least one digital video transport stream containing a plurality of original data packets. The apparatus comprises the following video processor:

a video processor capable of retrieving said stored original data packets from said input buffer and determining from said original data packets N data frequencies associated with N most recently received ones of said plurality of original data packets, wherein said video processor estimates from said N data frequencies an estimated data frequency of a plurality of next incoming original data packets and uses said estimated data frequency to determine an insertion rate at which said new data packets may be inserted into said plurality of next incoming original data packets.

In contrast, Pinder discloses a system for dynamically controlling the rate of insertion of data into an outgoing bit stream. In Pinder, an input buffer receives an incoming bit stream and transfers it to a packet handler. The incoming bit stream contains incoming overhead and content information. The incoming overhead contains information specific to the incoming bit stream, e.g., MPEG table packets, stuffing packets, and incoming conditional access packets. The content information includes programming information, e.g., video packets, audio packets, and data packets. The MPEG table packets contain information specific to and describing the incoming bit stream. The packet handler receives the incoming bit stream from the input buffer, demultiplexes it, and extracts the incoming MPEG table information. The packet handler determines the content of the outgoing MPEG table packets and the rate at which the MPEG table packets should be inserted into the outgoing bit stream. This determination is based on the information extracted from the MPEG tables in the incoming bit stream and on input from control system. The packet handler determines the available capacity for insertion of the bit stream and adjusts the rate of insertion from the desired to an

actual insertion rate. The adjustment can be done based on parameters such as the type of MPEG table to be inserted or the desired frequency of insertion. The packet handler constantly monitors the available capacity for insertion of the bit stream and adjusts the actual insertion rates accordingly. The packet handler includes packet router logic that determines the available capacity for insertion by monitoring the capacity of input buffer. The packet router logic delays enabling an insertion if the input buffer is not empty. The input buffer must become empty before an insertion is enabled.

Thus, Bertram and Shimomura in view of Pinder do not teach or suggest a television broadcasting system comprising a plurality of broadcast facilities, each of which comprises an apparatus for inserting new data packets into a received at least one digital video transport stream containing a plurality of original data packets. Bertram and Shimomura in view of Pinder merely teach television broadcasting system having an apparatus for extracting MPEG table packets from an incoming digital video transport stream, and inserting the MPEG table packets into an outgoing bit stream based on the bit stream's available capacity for insertion. Moreover, the MPEG table packet insertion apparatus taught by Bertram and Shimomura in view of Pinder does not involve estimating data frequency of a plurality of next incoming original data packets from N data frequencies and using the estimated data frequency to determine an insertion rate at which the new data packets may be inserted into the plurality of next incoming original data packets, as claimed. The insertion apparatus taught by Bertram and Shimomura in view of Pinder is merely based on monitoring the capacity of the input buffer. Accordingly, claim 15 is patentable over Bertram and Shimomura in view of Pinder.

With respect to claims 16-20, which depend upon claim 15 and recite additional features of the invention, applicant believes these claims to be allowable for the same reasons as stated for claim 15.

In view of the foregoing, withdrawal of the rejection of claims 15-20 is respectfully urged.


6. Claim 21 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Bertram and Shimomura in view of Pinder and further in view of Firoiu.

Claim 21 depends from claim 15 and therefore includes the subject matter recited in claim 15. As discussed above, the subject matter recited in claim 15 is not taught or suggested by Bertram and Shimomura in view of Pinder. Firoiu, cited by the examiner for disclosing data packets scaled by a weighting factor, fails to cure the deficiencies of Bertram and Shimomura in view of Pinder as Firoiu does not teach or suggest, among other features, the video processor called for in claim 21. Accordingly, withdrawal of these rejections is respectfully requested.

7. Favorable reconsideration of this application is respectfully requested as it is believed that all outstanding issues have been addressed herein and, further, that claims 1-21 are in condition for allowance. Should there be any questions or matters whose resolution may be advanced by a telephone call, the examiner is cordially invited to contact applicants' undersigned attorney at his number listed below.

8. The Commissioner is hereby authorized to charge payment of any additional filing fees required under 37 CFR 1.16 and any patent application processing fees under 37 CFR 1.17, which are associated with this communication, or credit any overpayment to Deposit Account No. 50-2061.

Respectfully submitted,

  
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